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NEAR Spacecraft Reveals Major Features of Eros

Asteroid 433 Eros is slightly smaller than predicted, with at least two medium-sized craters, a long surface ridge and a density comparable to the Earth's crust, according to measurements from NASA's Near Earth Asteroid Rendezvous (NEAR) spacecraft.

NEAR's science instruments observed about two-thirds of Eros on Dec. 23, 1998, as the spacecraft flew by the asteroid following an unsuccessful firing of its main engine a few days earlier. A subsequent successful firing of the engine put NEAR on course to rendezvous with Eros to begin its planned yearlong orbital mission starting in mid-February 2000.



Artist's Concept

During the flyby, 222 photos and supporting spectral observations of Eros were taken from as close as 2,375 miles (3,830 kilometers) from the asteroid by the spacecraft's multi-spectral imager, infrared spectrometer and radio science experiment.

"The flyby of Eros has given us fundamental information that will help us plan a better orbital mission at Eros," said Dr. Andrew F. Cheng, NEAR project scientist at The Johns Hopkins University Applied Physics Laboratory (APL) in Laurel, MD.

First observed from the Earth more than 100 years ago, Eros was known to be an S-type asteroid with high concentrations of silicate minerals and metal. However, few details about its structure or composition are observable from the ground.

The NEAR flyby produced evidence of variations in surface color and reflected light (or albedo) that suggest the asteroid has a diverse surface makeup. Closer observations during the comprehensive yearlong orbital study of Eros will be needed to determine its precise composition.

The science team has determined that Eros is slightly smaller than originally estimated from ground-based radar observations, with a size of 21 by 8 by 8 miles (33 by 13 by 13 kilometers), versus an estimate of 25.3 by 9 by 8 miles (40.5 by 14.5 by 14 km). The asteroid rotates once every 5.27 hours and has no discernible moons.

Flyby imaging of the asteroid's surface revealed a prominent elongated ridge that extends along its length for as much as 12 miles (20 km). "This ridge-like feature, combined with the measurements of high density, suggests that Eros is a homogeneous body rather than a collection of rubble" such as Mathilde appears to be, said Dr. Joseph Veverka, of Cornell University, Ithaca, NY, who heads the mission's imaging team. "It might even be a remnant of a larger body that was shattered by an impact."

The surface of Eros is pocked with craters. The two largest craters are four miles and 5.3 miles (8.5 and 6.5 km) in diameter, less than half the size of asteroid Mathilde's largest craters. The existence of fewer, smaller craters could be an indication that Eros has a relatively young surface when compared to Ida.

NEAR and Eros will cross paths again in February 2000. The spacecraft will then be inserted into orbit around the asteroid and begin its yearlong study.

Flyby images of Eros and a related movie, an asteroid shaped model and a chart of spectral observations is available on the NEAR mission Web site at: <http://near.jhuapl.edu>

Wallops Shorts..... Fire Department

The Wallops Fire Department responded to a structure fire at the new Navy housing construction site on Feb. 11.

Sounding Rocket Launch

A Black Brant X sounding rocket was successfully launched Feb. 11 from the Poker Flat Research Range, AK. The experiment was to make a multiple-point measurement of the magnetic field, which will be used to calculate magnetic-field-aligned current density along the rocket trajectory. The principal investigator was Dr. Kristina Lynch, University of New Hampshire. Frank Lau, Sounding Rockets Program Office, was the payload manager.

Wallops Contractor Association Formed

Contractors at the Wallops Flight Facility now have a new avenue to "bend the ear" of NASA senior management with the establishment of the Wallops Contractor Association (WCA).

The WCA serves as a medium for NASA senior management to exchange information with the various support contractor firms at Wallops.

Arnold Torres, Director of Suborbital Projects and Operations, said "I am very pleased with the establishment of the WCA. It will provide NASA senior managers with the ability to discuss issues with contractor representatives that may be of a concern to everyone at Wallops."

Bob Hickman, WCA President, said, "The association not only provides an opportunity to discuss common issues with NASA senior management, but also serves as a forum for all contracting organizations here at Wallops to look at issues that may only be of concern to the private sector organizations."

The association includes contractors affiliated with NASA both on-site at Wallops and those off-site. Voting members typically include the on-site contractors and are selected by the NASA Wallops Senior Manager. Hickman noted that regardless of the size of the company, everyone in the association has equal input.

The WCA meets once a quarter and there are no dues. Any expenses for meetings and other activities are shared equally among voting-member companies.

For further information on the WCA, contact Hickman at x2274. The next meeting is scheduled for April 1.

Petersen Named Dryden Director

NASA Administrator Daniel S. Goldin has named Kevin L. Petersen as Director of Dryden Flight Research Center. Petersen has been Acting Director of Dryden since Aug. 1, 1998. He had served as the center's Deputy Director since January 1996.

Since joining Dryden as an aerospace engineer in 1974, Petersen's experience has included work on F-8 Digital Fly-by-wire, Highly Maneuverable Aircraft Technology (HiMAT) and X-29 forward-swept wing flight research projects. He also served as chief of the Vehicle Technology Branch and chief of the National Aerospace Plane projects office.

Strange Code in E-Mails

Some of you may have noticed strange codes in recent e-mail messages that looks something like this:
<000088><italic><bold>file</bold></italic></000088>

This is code that computer software reads to translate words into colors, bold, italic, etc. Unfortunately, the two e-mail software programs Goddard has been using (Eudora and MS Exchange) do not have compatible coding structures.

If you compose an e-mail in Eudora using different text colors, for example, and send that e-mail to someone who receives it in MS Exchange, the receiver will only see the code—not the beautiful text you intended. The same is true of someone composing in MS Exchange that sends an e-mail to a Eudora user.

To be user friendly, it is suggested that you NOT use fancy text (i.e., colors, bold, italic, underline, etc.) when sending an e-mail to someone who may have a different e-mail application than the one you are using.



Congratulations

Terry Sommers, Real-Time Software Engineering Branch, was recently honored for 30 years of active volunteer service in the Pocomoke Fire Company. He also received a Maryland Governor’s Certificate from Senator Lowell Stotzfus and Delegate Bennett Bozman.

Thanks!

Larry Thornton, CORTEZ III, would like to thank his friends and fellow employees at Wallops for sponsoring him in the Polar Bear Plunge that took place at Rehobeth Beach, DE. on Feb. 7. The Lewes (Delaware) Polar Bear Club donates all proceeds to the Special Olympics.

Red Cross
Blood Drive
March 4

Call the Health Unit, x1766 for an appointment.



Five Reasons to Donate Blood

It’s Safe.
The U.S. Surgeon General and all medical authorities agree that it is not possible to catch any disease by giving blood.

It’s Easy.
Following registration, you answer simple medical history questions and receive a mini-physical. Then, you roll up your sleeve. You feel a brief pinch and the 5-8 minute donation is over before you know it. Afterward, you relax for a few minutes with refreshments.

It’s Fast.
The entire life-saving process takes about one hour.

It Saves Lives.
You will be helping children and adults. Because donations are processed into a variety of blood components, each donation can save the life of as many as four people — people with cancer, leukemia, anemia, severe burns, hemophilia and those under-going surgery for illness or injury.

Recipients of organ transplants often require dozens of blood donations. Your donation will help ensure an adequate supply at all times.

It Could Save Your Life.
Your free mini-physical gives you a check for anemia, plus your body temperature, pulse and blood pressure.

Upcoming Courses
Scheduled for Wallops

To enroll for any of the following courses contact Matt Jarvis on x66-3061 or e-mail: mjarvis@pop100.gsfc.nasa.gov All Code 800 Training Requests should be sent to Sherry Kleckner, Bldg. F-6.

E-Mail for Maximum Impact
March 17
8:30 a.m. - 4:30 p.m.
Directorate funded (\$140-\$200)

Building Morale in Changing Times
March 18-19
8:30 a.m. - 4:30 p.m.
Center funded

Oral Presentation Strategies
April 19 and 20
9 a.m. - 4 p.m.
April 21
9 a.m. - Noon
Center funded
<http://ohr.gsfc.nasa.gov/gsfc/training/Annualcal/COMM.HTM#comm5>

The 3 Habits of Highly Effective Communicators
April 22
9 a.m. - noon
Directorate funded (\$50-\$100)
<http://ohr.gsfc.nasa.gov/gsfc/training/Annualcal/COMM.HTM#comm7>

Inside Wallops is posted weekly on the Wallops Homepage:
<http://www.wff.nasa.gov>

Select *Public and Education Outreach*, scroll down and select *Recent Newsletters* for those posted during the current month or *Older Newsletters* to see 1997, 1998 or previous 1999 editions.

For Sale

Three bedroom brick rancher on 19 acres east of Salisbury. Living room, dining room, family room, fireplace and garage. More land is available. Call (410) 546-3211.

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